

EXPERIMENTAL PLAN FOR THE TRANSFORMATION OF
GRAMMAR SCHOOL AND VOCATIONAL SECONDARY
SCHOOL TRAINING INTO DIFFERENTIATED
BRANCHES OF A UNIFIED SECONDARY
SCHOOL EDUCATION^x

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I.

The aim of the research and its relation to the general socio-economic and educational developmental tendencies

The aim of the research is to experiment in an alternative to the long-range development of the secondary school training system. It is important and useful to elaborate theoretical plans /models/ for development but the possibilities of the real improvement of our educational system can be revealed only by the experimental testing of some alternatives to development. Even if a plan is most carefully worked out, its acceptance and general introduction without any experimental testing increase the danger of serious failure.

Those general international tendencies which represent the motive power of the transformation of the secondary school training system are quite obvious. The main tendencies, without making reference to well-known details, are as follows:

1. The requirements resulting from the widening and deepening of socialist democracy, those resulting from the growth of the scientific-technical revolution and from the turning of science into a productive force demand a general education from the members of society which is thorough and, as concerns its quality, on a higher level than it is today; they demand a wider intellectual horizon, and a better understanding of the economic, political and cultural relations of social development. Every international educational project and reform made on the basis of an analysis of the long-range socio-economic development, emphasizes the increased significance of general education.

2. The scientific-technical development of our age changes the role of man in the working process. The highly

specialized worker type is replaced by the new generally educated worker type who knows the theoretical basis of a trade group, too. This tendency appears on a higher level with engineers and technicians also. While the role of aptitude for special physical work, of manual skill and mechanical skillfulness is reduced, the general desire to obtain a comprehensive view based on a theoretical education in connection with a certain trade, the aptitude for the recognition and quick solution of technical-organizational problems and the knowledge of factors regulating production become more and more important.

A certain amount of the knowledge obtained earlier is made out-of-date by quick technical changes. Therefore employees have to be able to switch over in a short time to serve other scopes of activities. It can be done if, in the course of training, emphasis is laid on the acquisition of the principia and on the understanding of correlations. /See Dr. György Szakasits D.: "Hungary and the scientific-technical revolution", Kossuth Publishing House, 1973. page 171./

In our country this tendency is modified in such a way that, as a result of the relative backwardness concerning a certain part of the means of production, and as a consequence of the difficulties arising for different reasons when adopting new techniques and technologies, semi-skilled and skilled workers performing quite simple specialized labour will still be needed on a large scale for a long time. However, even for these scopes of activity, young people must be trained in such a way that, if technical development requires, by taking advantage of various possibilities of further training, they should be able to switch over to labours demanding a higher qualification. Parallel with this, the highly developed means of production already or about to be introduced make the training of a new type of labour-power an urgent task of today. Otherwise, the pace of introducing new techniques

and technologies depends largely on the level of the workers' general and trade education.

3. The most significant principle of our socialist education must be more operative in the interest of both our social-political and our technical-economic development; that is, all children must develop to the highest degree according to their natural possibilities, independently from their birth and family background. Though it is a long process, in this way everybody will be in the most appropriate place in society and will serve the interests of society through his or her creative work in such a way that personal desires and ambitions will also be realized. In the interest of the realization of the principle mentioned above, the school system should compensate disadvantages originating in an unfavourable family background, it should assure equal chances for every child to develop his or her personality and, on the basis of a recognition of the children's capabilities, it should give them the opportunity to develop their individual capacities; and finally, it should be able to direct the children's further education and career decisions adequately.

/Introduction of compensatory and remedial lessons into the school system; Connection of the principles of unity and differentiation; keeping the principle of orientation in view./

The existence of the above-mentioned tendencies usually determines the principal trends of the developing of public education, too. According to international experiences in the development of education and the Hungarian analyses, too, these main directions are as follows:

1. The demand for a general education on a more extended and higher level inevitably prolongs the period of compulsory education for everybody within the school system which provides a common cultural basis. There is no Hungarian educational project which would dispute the fact

that in the future it will become necessary to increase the present eight-year general school teaching which provides a common cultural basis.

2. An orientational system must be built up in the later period of universal compulsory education which will facilitate a better recognition of individual capabilities, help their stabilization and suitably direct the pupils in their choice of further education or career. The extension of common education based on the principle of orientation unites the interests arising from the tendency of the socio-economic development and from the pupils' developmental peculiarities, since, according to psychological researches, the period in which individual capabilities evolve and can be stabilized is between the ages of 14 and 17.

3. Differentiated training branches, lasting for shorter or longer periods, will be built into compulsory common education which consists of two or more stages. These branches will be in direct contact with the needs of cadres of different levels, with the needs of the national economy, culture and science. These differentiated sections may prepare pupils directly for their career and therefore demand classroom teaching to a lesser or greater extent, or they may be theoretical branches which prepare pupils for universities and other forms of higher education.

As well as special training and determined by the teaching objective the pupils' general education, though in different proportions, continues or, to be more precise, the amplification and enrichment of an already achieved general cultural basis goes on. Naturally, the above-mentioned directions of the development of public education operate in specific ways in each country. Their characteristic features are determined by various factors: among others, the particular way of development of the educational system of that country and its result, the present educational system, including the training structure of the schools, their personal and material conditions, the capacity and

inner structure of their buildings; the economic indicators which always determine education and the educational system fundamentally, and the real possibilities of their development /the economic-geographical location of the country, technical development, the tendency in the professional structure, etc./, the development of social conditions /the movement of the classes and strata/. Our opinion is that when developing Hungarian "public education it is essential to take the following particularities into consideration:

1. The eight-year general school is still not general in that sense of the word that, as regards the children's capabilities and capacities, it can assure adequate chances to all of them in the interest of its completion. Its effectiveness is not satisfactory, a considerable percentage of the pupils, according to objective survey data, learning the prescribed curricular material on a low level with very serious deficiencies. The conditions of our school buildings are unfavourable: they do not meet the modern requirements of education; municipal schools in particular are overcrowded and generally contain many more classes than they were planned for. During the years to come this situation will worsen.

2. It follows from the foregoing that the prolongation of the period of education, which gives a common cultural basis, from eight grades to nine or ten grades will supervene by degrees in our country and, probably, in such a way that the first or the first and second years of the present secondary and grammar school education will be integrated /will become common/ and thus the common training which is compulsory for everybody will form an 8+1 or an 8+2 structure. First, in all probability, this integration will involve secondary school education /grammar school and vocational school, that is, those pupils who succeed in the curriculum of the eight-year general school at a good standard, at least 70-75 per cent , then later /when the efficiency of the eight-year general school improves to such an extent that 85-90 per cent of the pupils succeed in

the curriculum of the general school at an appropriate standard, the first or the first and second grades of the present skilled workers' training schools will join in. This solution makes it possible that, in accordance with its social function, by constantly improving the efficiency of the present general school we can approach a long-range school system in which every Hungarian child will participate in a 9-10-year general education which is organized uniformly and is based on the principle of orientation.

The educational developmental trends delineated above are hypotheses. The question of whether these plans work or not, of whether these ways are successful and adequate for the needs of the socio-economic development can be settled only by means of experiments. Our planned experiment deals with only one area of the development of the school system delineated above but, without doubt, it is that area which, in present circumstances, is the most suitable to blaze the trail towards a new, up-to-date school system. This area is the integration of the first two grades of grammar school and vocational school. These two unified secondary school grades have two functions: they have to raise the level of general education and, besides, they have an orientational function which has to be realized in such a way that at the end of the second year, taking into account the pupils' interests and capacities, the school should be able to give them and their parents reliable advice concerning the direction of their further education and also the pupils, together with their parents, should be able to make a wise decision. To encourage orientation, in this time of training the lesson plan already contains a two-hour-period in which a foreign language can be learnt intensively. Thus the pupils' choice, which, in many respects, is decisive as regards their career, is postponed from the age 14 to that of 16. The directions taken by further study after the two unified secondary school years are as follows:

a/ theoretical branches of facultative training in the grammar school in the third and fourth grades. The main purpose of these branches in the grammar school, which comes into force in 1979, is to prepare pupils for college and university studies;

b/ vocational education, that is, the training branches in present vocational secondary schools. Their training objectives in the productive departments are: to train theoretically qualified skilled workers, having passed the final examination, for those professional groups which need theoretical knowledge /fulfilling, of course, the demands of the national economy for technical staff, too/ and, at the same time, to prepare the most suitable pupils for higher studies in their profession or to help them to attain a technician's qualification;

c/ we think it possible, during the experimental period, too, for those pupils who are not so good at their studies or who prefer working to learning, to abandon their studies at the end of the second year. Being in possession of an adequate educational basis and of a basic technical skill they could participate in some kind of shortened vocational training /this could be organized for the purpose of experiment/ either as unskilled workers or, after a certain period of adaptation, as semi-skilled workers, and they could find employment. Naturally, later when they become more mature nothing would prevent them from pursuing secondary school studies alongside their work.

II.

The starting points of the experimental plan

1. In the experiment we build upon the eight-year general schools. During the experimental period we cannot count on any change in the general school curriculum.

2. At the same time, we endeavour to elaborate the curriculum of the first two integrated years of secondary school in such a way that it would be organically integrated, with the educational basis attained in the

general school, and that it would rise to a higher level, that is, it would approach a 10-year training period in an 8+2 system which would provide a relatively complete common educational basis. In our opinion, the lesson plan of the first two years of secondary school is suitable for the purpose of organically connecting, in the future, the curriculum of these two secondary school years with that of the general school and also that it may contain a unified educational basis compulsory for every Hungarian child.

3. Since the main function of the integrated grades is to raise general education to a higher level, naturally, the grammar school curriculum to be introduced in 1979 will furnish a basis for the shaping of its training character which is better than that which the vocational school curriculum can provide, because this latter does not help the integration of secondary school education demanded by this development; what is more, it causes a greater divergence of grammar and vocational school than exists today and encourages early specialization of the majority of secondary school pupils. At the same time, the integration proposed by us is not one-sided because we think that technical education is an important part of general education and also that it has an essential role from the point of view of preparing and orientating pupils towards professional studies. The pupils acquire a theoretical and practical knowledge in the first two common years of the secondary school which can have manifold uses. For those pupils who abandon their studies, this helps them to find a job and can serve as a good basis for shortened skilled-worker training.

4. Thus education is completely common in the first two years of secondary school. On the basis of adequate orientation, at the end of the second year the pupils choose between theoretical /grammar school/ and professional /vocational training/ branches. Those pupils who finish the two common years in grammar school classes and choose a vocational school branch, move to vocational school while

those who finish the two common grades in vocational school and choose a grammar school branch move to the grammar school.

5. As concerns their curriculum, the differentiated, theoretical-grammar school education in the third and fourth years does not differ from the facultative grammar school training being introduced, except, that the significance of the choice of practical subjects and lessons lessens, because, for those who start to work immediately after the final examination, the experimental model assures the possibility of participation in skilled worker training.

6. According to many experts, building upon an 8+2-year general education and a technical cultural basis as mentioned above, it is possible to train a new type of skilled worker who have passed a final exam, who are generally educated, are welltrained in a professional-theoretical field and who possess suitable practical skills. Moreover, the efficiency of the practical training does not depend only on the number of practical lessons but on their better organization and on the elimination of the "vacant runs" still existing. The increase in the number of practicals beyond certain limits at the price of general education and professional academic training works against the requirements of modern techniques and technology concerning the qualification of skilled workers.

7. As we have mentioned, the vocational school level, according to our experimental plan, would provide an opportunity for suitable pupils to choose between two different, continuous ways of further education. On the one hand, they can gain admission to such university or college studies for which their vocational school qualifications are adequate, or, on the other hand, immediately after the final exam, to one year of studies to become technicians. On the basis of many experiences, it can be stated, that the courses which are at present organized alongside work

fer the training of technicians only partially meet the requirements: the theoretical level of qualified pupils is quite low. The national economy needs young technicians whose strong point is a thorough theoretical knowledge and who, after a certain period of adaptation, can also obtain the necessary practical experiences in their working place. Factories and enterprises are in most need of middle level technical workers; this also accounts for the organic fitting of the training of technicians into the system of continuous secondary school vocational training. In this way, a new 2+2+1 system of vocational school training would come about. The organic building of the continuous training of technicians upon that period of vocational school training which gives final examination certificate and a certificate for skilled workers would open up new perspectives for our best vocational schools which would inspire the teaching staff.

8. Bearing in mind that we have to help the pupils' orientation on the basis of their aptitudes in consideration of real perspectives /finding a job, technical training, further education at universities and colleges/ after the final examination, we have to regard the third year of vocational school branches also as an important period which is worth being kept under observation. In the fourth year of vocational school branches we intend to introduce a facultative, two-hour lesson which, on the one hand, for those intending to work immediately would facilitate adaptation to the work-place and, on the other hand, would help further education. The facultative system helping further education will contain such academic subjects /in industrial branches: physics/ which are essential from the point of view of further education, while where finding a job is concerned more opportunities for practicals will be provided. At the end of the third year, on the analysis of the data observed, the pupils would get advice on choosing between these two branches.

9. The size of the experiment, the number of schools

involved in the experiment and the training character of the schools depend on the available material conditions, the willingness of the leaders and teaching staffs of schools to cooperate and on the possibilities of scientific directional organization. The minimum experimental size could include the participation of, at least, two or three vocational schools and some grammar school classes. This can be called an experimental unit demanding the closest co-operation of the participating schools. This cooperation includes the concerted organization of the whole orientational process, the training co-operation /the teaching of technical fundamentals in the first and second year to those who have enrolled in the grammar school; the help of the grammar school in the teaching of subjects providing general knowledge/ and the common management of the process of moving to the differentiated branches of grammar school from the vocational school and to the vocational school from the grammar school. Moreover, the organization of the present secondary schools, now working in isolation, into a co-operating system in a certain area and a pedagogically more reasonable and economical use of the teaching staff, equipment and material conditions of schools is not an insignificant object of the experiment.

THE EXPERIMENTAL LESSON PLANS.

The lesson plan for the first and the second years

1. Compulsory subjects	I.	II.
Hungarian language and literature	2+2	2+1
History	2	2
Russian language	3	2
2nd foreign language	2	2
Mathematics	5	4
Physics	2	2
Chemistry	2	4
Biology	-	2
Geography	3	2
Music	1	1
Analysis of drawing and works of art	2	-
Physical training and knowledge of national defence	3	3
The form-master's lesson	1	1
Safety of work	1	-
Technical fundamentals ^X	1	4
Manual training	3	4
	<u>35</u>	<u>36</u>
2. Facultative language lessons	2	2

X

The subject named technical fundamentals includes the following subject matters: electrical engineering; industrial drawing; mechanics; machine parts.

The proportion of these fields within the subject, their simultaneous and successive relations must be elaborated in the course of work on the syllabus.

LESSON PLANS FOR THE GRAMMAR SCHOOL

Subjects	I.	II.	III.	IV.
1. Compulsory subjects				
Hungarian language	2	1	2	1
Hungarian literature	2	2	3	3
History and social knowledge	2	2	3	4
Bases of our world outlook	-	-	-	2
Russian language	3	2	3	3
2nd foreign language	2	2	-	-
Mathematics	5	4	3	3
Physics	2	2	3	3
Chemistry	2	4	-	-
Biology	-	2	3	2
Geography	3	2	-	-
Music	1	1	1	-
Analysis of drawing and works of art	2	-	1	-
Physical training and knowledge of national defence	3	3	3	3
Technical fundamentals	1	4	-	-
Manual training	3	4	-	-
Safety at work	1	-	-	-
The form-master's lesson	1	11	1	1
Facultative subjects ^X	-	-	7	9
	35	36	33	34
2. Optionals^{XX}	2	2	2	2
3. Summer manual training	4 Weeks			

^XThe facultative lessons will be used according to the directives of the grammar school facultative education to be introduced in 1979. The character of the facultative practical lessons can be enumerated as follows: educational fundamentals, fundamentals of popular education, guiding knowledge, shorthand-typing, etc.

^{XX}Optional can be any facultative academic subject or a variant of a subject, any foreign language or art subject.

LESSON PLAN

for the general mechanics' branch

The skilled worker qualifications which are obtainable at the end of the 4th form are: 503 mechanical cutters, 313 motor mechanics and maintainers.

The qualification which is obtainable at the end of the 5th form is: general engineering technician.

Subjects:	I.	II.	III.	IV.	V.
1. General education subjects					
Hungarian language and literature	2+2	2+1	2+1	2+1	-
History	2	2	2	2	-
Bases of our world outlook	-	-	-	2	-
Russian language	3	2	2	2	-
2nd foreign language	2	2	-	-	-
Mathematics	5	4	3	3	-
Physics	2	2	2	-	-
Chemistry	2	4	-	-	-
Biology	-	2	-	-	-
Geography	3	2	-	-	-
Music	1	1	-	-	-
Analysis of drawing and works of art	2	-	-	-	-
Physical training	3	3	3	3	3
The form-master's lesson	1	1	1	1	1
Safety at work	1	-	-	-	-
Technical fundamentals	1	4	-	-	-
Manual training	3	4	-	-	-
2. Vocational subjects					
Mechanical engineering knowledge	-	-	4	3	-
Electrical engineering	-	-	2	2	-
Technology	-	-	3	3	4
Mechanical drawing	-	-	3	2	3
Gauging	-	-	2	2	2
Practical lessons	-	-	8	8	8
Social political knowledge	-	-	-	-	3
Economic, organizational and directional knowledge	-	-	-	-	3
Mechanical engineering	-	-	-	-	4
Automation	-	-	-	-	4
3. Facultative subject					
	-	-	-	2	-
	35	36	38	38	35
4. Facultative language lessons					
	2	2	2	2	4
Summer practice					
/4-4-4-4-0 weeks	36	40	42	42	0

3/ additionally for pupils applying for further education: physics; for the rest: gauging.

LESSON PLAN

for the branch training pupils to produce power-current electrical machines and instruments

The skilled worker qualification which is obtainable at the end of the 4th form is: 504 electro-mechanics

The qualification which is obtainable at the end of the 5th form is: technician for producing power-current electrical machines and instruments.

Subjects:	I.	II.	III.	IV.	V.
1. General education subjects					
Hungarian language and literature	2+2	1+2	1+2	1+2	-
History	2	2	2	2	-
Bases of our world outlook	-	-	-	2	-
Russian language	3	2	2	2	-
2nd foreign language	2	2	-	-	-
Mathematics	5	4	3	3	-
Physics	2	2	2	-	-
Chemistry	2	4	-	-	-
Biology	-	2	-	-	-
Geography	3	2	-	-	-
Music	1	1	-	-	-
Analysis of drawing and works of art	2	-	-	-	-
Physical training	3	3	3	3	3
The form-master's lesson	1	1	1	1	1
Safety at work	1	-	-	-	-
Technical fundamentals	1	4	-	-	-
Manual training	3	4	-	-	-
2. Vocational subjects					
Mechanical engineering knowledge	-	-	2	-	-
Technology	-	-	3	3	4
Electrical engineering	-	-	5/2	-	-
Electrical machines and equipment	-	-	0/3	4	4
Mechanical drawing	-	-	2	2	3
Electrical gauging	-	-	2	3	4
Manual training	-	-	8	8	8
Social political knowledge	-	-	-	-	3
Economic, organizational and directional knowledge	-	-	-	-	3
Computers	-	-	-	-	2
3. Facultative subject					
	-	-	-	2	-
	35	36	38	38	35
4. Facultative language lessons					
Summer practice	2	2	2	2	4
/4-4-4-4-0 weeks/	36	40	42	42	0

3/ additionally for pupils applying for further education; physics for the rest; electrical gauging

LESSON PLAN

for the precision-mechanical - instrument-industrial branch

The skilled workers qualifications which are obtainable at the end of the 4th form are: 614 electro-mechanics 615 mechanical instrument makers.

The qualification which is obtainable at the end of the 5th form is: precision-mechanical - instrument-industrial technician.

Subjects:	I.	II.	III.	IV.	V.
1. General education subjects					
Hungarian language and literature	2+2	1+2	1+2	1+2	-
History	2	2	2	2	-
Bases of our world outlook	-	-	-	2	-
Russian language	3	2	2	2	-
2nd foreign language	2	2	-	-	-
Mathematics	5	4	3	3	-
Physics	2	2	2	-	-
Chemistry	2	4	-	-	-
Biology	-	2	-	-	-
Geography	3	2	-	-	-
Music	1	1	-	-	-
Analysis of drawing and works of art	2	-	-	-	-
Physical training	3	3	3	3	3
The form-master's lesson	1	1	1	1	1
Safety at work	1	-	-	-	-
Technical knowledge	1	4	-	-	-
Manual training	3	4	-	-	-
2. Vocational subjects					
Electrical engineering	-	-	2	-	-
FEM Precision-mechanical elements	-	-	3	2	-
Automation	-	-	2	4	6
Technology	-	-	3	2	3
Mechanical drawing	-	-	3	2	-
Gauging	-	-	2	2	3
Practical lessons	-	-	7	8	8
Economic, organizational and direct-	-	-	-	-	3
Industrial electronics	-	-	-	-	5
Social political knowledge	-	-	-	-	3
3. Facultative subject	-	-	-	2	-
	35	36	38	38	35
4. Facultative language lessons	2	2	2	2	4
Summer practice /4-4-4-4-0 weeks	36	40	42	42	-

3/ additionally for pupils applying for further education:
physics; for the rest: gauging.